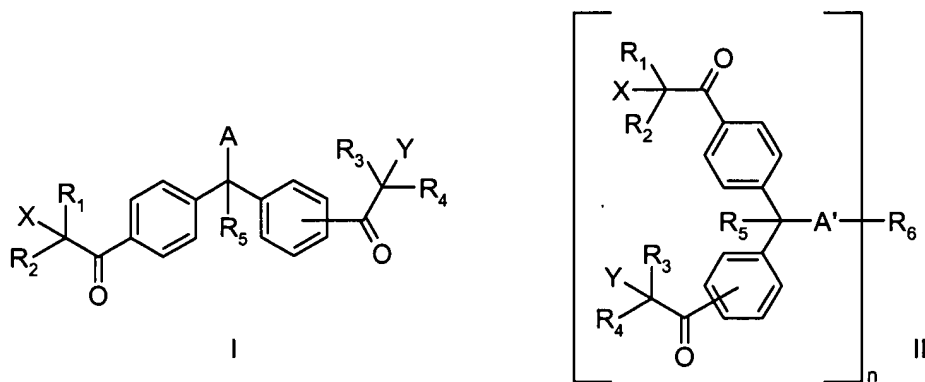


IN THE CLAIMS

The text of all claims under examination is submitted, and the status of each is identified. This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (currently amended) A photoinitiator of formula I or II



wherein

R_1 , R_2 , R_3 and R_4 are each independently of the others C_1 - C_8 alkyl; C_1 - C_4 alkyl substituted by OH, C_1 - C_4 alkoxy, -CN, -COO(C_1 - C_8 alkyl), (C_1 - C_4 alkyl)-COO-, benzyl, phenyl or by -N(R_{13})(R_{14}); C_3 - C_6 alkenyl, benzyl, -CH₂-C₆H₄-(C_1 - C_4 alkyl) or phenyl; or

R_1 and R_2 together and / or R_3 and R_4 together are unbranched or branched C_2 - C_9 alkylene or C_3 - C_6 -oxa- or -aza-alkylene;

R_5 is hydrogen, C_1 - C_8 alkyl, C_3 - C_6 alkenyl, benzyl, -CH₂-C₆H₄-(C_1 - C_4 alkyl) or phenyl;

A is Cl, Br, -O- R_7 , -NR₈R₉ or -S- R_{16} ;

A' is -O-, -NH- or -NR₈-;

X and Y are each independently of the other -O- R_{10} or -N(R_{11})(R_{12});

n is an integer from 1 to 10;

R_6 is an n-valent radical of linear or branched C_2 - C_{20} alkyl the carbon chain of which may be interrupted by cyclohexanediyl, phenylene, -CH(OH)-, -C(C₂H₅)(CH₂-CH₂-OH)-, -C(CH₃)(CH₂-CH₂-OH)-, -C(CH₂-CH₂-OH)₂-, -N(CH₃)-, -N(C₂H₅)-, -N(CH₂-CH₂-OH)-, -CO-O-, -O-CO-, -O-CO-NH, NH-CO-O-, -P(CH₂-CH₂-OH)-, -P(O)(CH₂-CH₂-OH)-, -O-P(O-CH₂-CH₂-OH)-O-, -O-P(O)(O-CH₂-CH₂-OH)-O-, -O-cyclohexanediyl-C(CH₃)₂-cyclohexanediyl-O-, -O-phenylene-C(CH₃)₂-phenylene-O-, -O-phenylene-CH₂-phenylene-O-, -Si(CH₃)₂-, -O-Si(CH₃)₂-O-, -O-Si(CH₃)(O-CH₃)-O-, -Si(CH₃)(R_{17})-O-Si(CH₃)(R_{18})-,

- 5-(2-hydroxyethyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl and/or by from one to nine oxygen atoms, or
- R_6 is an n-valent radical of linear or branched $-\text{CO}-\text{NH}-(\text{C}_2-\text{C}_{16}\text{alkylene})-(\text{NH}-\text{CO})_{n-1}-$ or linear or branched $-\text{CO}-\text{NH}-(\text{C}_0-\text{C}_9\text{alkylene})-(\text{NH}-\text{CO})_{n-1}-$ which may be interrupted by one or two phenylene, methylphenylene, phenylene-O-phenylene, cyclohexanediyl, methylcyclohexanediyl, trimethylcyclohexanediyl, norbornanediyl, [1-3]diazetidene-2,4-dione-1,3-diyl, 3-(6-isocyanatohexyl)-biuret-1,5-diyl or 5-(6-isocyanatohexyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl radical(s), or
- R_6 is an n-valent radical of linear or branched $-\text{CO}-(\text{C}_0-\text{C}_{12}\text{alkylene})-(\text{CO})_{n-1}-$ and the alkylene may be interrupted by oxygen, phenylene, cyclohexanediyl or by norbornanediyl; , or
- R_6 is an n-valent radical of linear or branched $-\text{C}_2-\text{C}_{50}\text{alkylene}$ the carbon chain of which is interrupted by one to 15 oxygen, and may be substituted by OH or NH_2 ;
- R_7 is hydrogen, $-\text{Si}(\text{C}_1-\text{C}_6\text{alkyl})_3$, $\text{C}_1-\text{C}_{12}\text{alkyl}$, R_{21} , $\text{C}_2-\text{C}_{18}\text{acyl}$, $-\text{CO}-\text{NH}-\text{C}_1-\text{C}_{12}\text{alkyl}$, $\text{C}_2-\text{C}_{20}\text{hydroxyalkyl}$, $\text{C}_2-\text{C}_{20}\text{methoxyalkyl}$, 3-($\text{C}_1-\text{C}_{18}\text{alkoxy}$)-2-hydroxy-propyl, 3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]-propyl, 2,3-dihydroxy-propyl or linear or branched $\text{C}_2-\text{C}_{21}\text{hydroxyalkyl}$ or ($\text{C}_1-\text{C}_4\text{alkoxy}$)- $\text{C}_2-\text{C}_{21}\text{alkyl}$ the carbon chain of which is interrupted by from one to nine oxygen atoms;
- R_8 and R_9 are each independently of the other hydrogen, $\text{C}_1-\text{C}_{12}\text{alkyl}$; $\text{C}_2-\text{C}_4\text{alkyl}$ substituted by one or more of the groups OH, $\text{C}_1-\text{C}_4\text{alkoxy}$, -CN, $-\text{COO}(\text{C}_1-\text{C}_4\text{alkyl})$; $\text{C}_3-\text{C}_5\text{alkenyl}$, cyclohexyl or $\text{C}_7-\text{C}_9\text{phenylalkyl}$, or
- when $R_9 = \text{H}$ or methyl, R_8 is also $\text{C}_2-\text{C}_{50}\text{alkyl}$ substituted by one or more of the groups methyl, ethyl, OH, NH_2 , and is interrupted by one or more oxygen, -NH-, cyclohexanediyl, norbornanediyl or phenylene, or
- R_8 and R_9 together are unbranched or branched $\text{C}_3-\text{C}_9\text{alkylene}$ which may be interrupted by -O- or by $-\text{N}(\text{R}_{15})-$;
- R_{10} is hydrogen, $-\text{Si}(\text{C}_1-\text{C}_6\text{alkyl})_3$, $\text{C}_1-\text{C}_8\text{alkyl}$, $\text{C}_3-\text{C}_6\text{alkenyl}$ or benzyl,
- R_{11} and R_{12} are each independently of the other $\text{C}_1-\text{C}_{12}\text{alkyl}$; $\text{C}_2-\text{C}_4\text{alkyl}$ substituted by one or more of the groups OH, $\text{C}_1-\text{C}_4\text{alkoxy}$, -CN, $-\text{COO}(\text{C}_1-\text{C}_4\text{alkyl})$; $\text{C}_3-\text{C}_5\text{alkenyl}$, cyclohexyl or $\text{C}_7-\text{C}_9\text{phenylalkyl}$, or
- R_{11} and R_{12} together are unbranched or branched $\text{C}_3-\text{C}_9\text{alkylene}$ which may be interrupted by -O- or by $-\text{N}(\text{R}_{15})-$;
- R_{13} and R_{14} are each independently of the other hydrogen, $\text{C}_1-\text{C}_{12}\text{alkyl}$; $\text{C}_2-\text{C}_4\text{alkyl}$ substituted by one or more of the groups OH, $\text{C}_1-\text{C}_4\text{alkoxy}$, -CN, $-\text{COO}(\text{C}_1-\text{C}_4\text{alkyl})$; $\text{C}_3-\text{C}_5\text{alkenyl}$, cyclohexyl or $\text{C}_7-\text{C}_9\text{phenylalkyl}$, or

R_{13} and R_{14} together are unbranched or branched C_3 - C_9 alkylene which may be interrupted by -O- or by -N(R_{15})-;

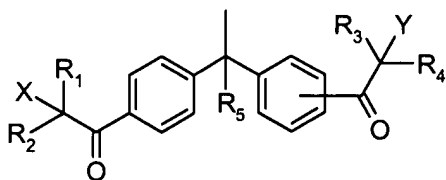
R_{15} is hydrogen, C_1 - C_4 alkyl, allyl, benzyl, C_1 - C_4 hydroxyalkyl, $-CH_2CH_2-COO(C_1-C_4alkyl)$ or $-CH_2CH_2CN$;

R_{16} is C_1 - C_{18} alkyl, hydroxyethyl, 2,3-dihydroxypropyl, cyclohexyl, benzyl, phenyl, C_1 - C_{12} alkylphenyl, $-CH_2-COO(C_1-C_{18}alkyl)$, $-CH_2CH_2-COO(C_1-C_{18}alkyl)$ or $-CH(CH_3)-COO(C_1-C_{18}alkyl)$;

R_{17} and R_{18} are each independently of the other a monovalent radical methyl, $-O-Si(CH_3)_3$, $-O-Si(CH_3)_2-O-Si(CH_3)_3$, $-O-Si(CH_3)[-(CH_2)_p-OH]-O-Si(CH_3)$ or a bivalent radical $-O-Si(CH_3)_2-$, $-O-Si(CH_3)[-(CH_2)_p-OH]-$, $-O-Si(CH_3)(R_{19})-$, $-O-Si(CH_3)(R_{20})-$ and form chains;

R_{19} and R_{20} are each independently of the other a monovalent radical methyl, $-O-Si(CH_3)_3$, $-O-Si(CH_3)_2-O-Si(CH_3)_3$, $-O-Si(CH_3)[-(CH_2)_p-OH]-O-Si(CH_3)$ or a bivalent radical $-O-Si(CH_3)_2-$, $-O-Si(CH_3)[-(CH_2)_p-OH]-$, $-O-Si(CH_3)(R_{19})-$, $-O-Si(CH_3)(R_{20})-$ and extend chains and, when R_{19} and R_{20} are linked into a ring, $-(R_{19})-(R_{20})-$ is the bridge -O- ;

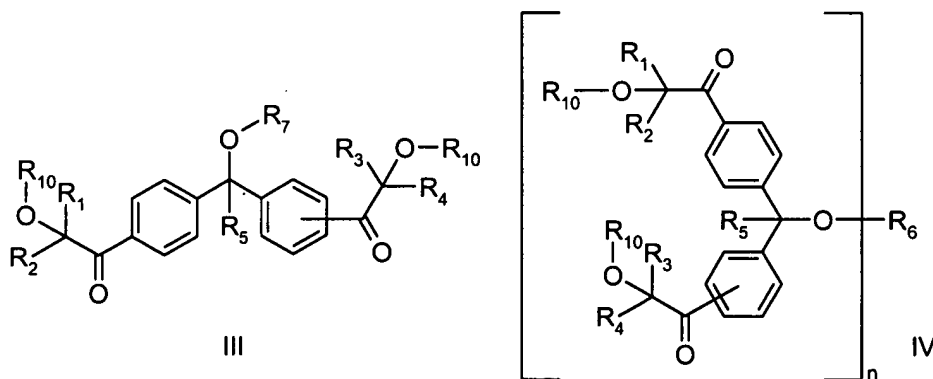
R_{21} is, independently of formula I, a radical of formula



; and

p is an integer from 2 to 12, it being possible for the carbon chain of the alkylene to be interrupted by from one to three oxygen atoms.

2. (currently amended) A photoinitiator according to claim 1 of formula III or IV

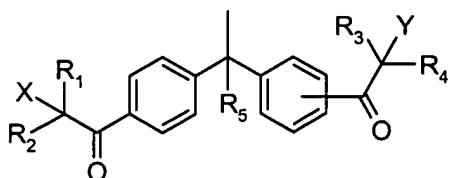


wherein

- R_1 , R_2 , R_3 and R_4 are each independently of the others C_1 - C_8 alkyl, C_3 - C_6 alkenyl, benzyl, $-CH_2-C_6H_4-(C_1-C_4$ alkyl) or phenyl, or
- R_1 and R_2 together and / or R_3 and R_4 together are unbranched or branched C_2 - C_9 alkylene;
- R_5 is hydrogen, C_1 - C_8 alkyl, C_3 - C_6 alkenyl, benzyl, $-CH_2-C_6H_4-(C_1-C_4$ alkyl) or phenyl;
- n is an integer from 1 to 10; and
- R_6 is an n -valent radical of linear or branched C_2 - C_{20} alkyl the carbon chain of which may be interrupted by cyclohexanediyl, phenylene, $-CH(OH)-$, $-C(C_2H_5)(CH_2-CH_2-OH)-$, $-C(CH_3)(CH_2-CH_2-OH)-$, $-C(CH_2-CH_2-OH)_2-$, $-N(CH_3)-$, $-N(C_2H_5)-$, $-N(CH_2-CH_2-OH)-$, $-CO-O-$, $-O-CO-$, $-P(CH_2-CH_2-OH)-$, $-P(O)(CH_2-CH_2-OH)-$, $-O-P(O-CH_2-CH_2-OH)-O-$, $-O-P(O)(O-CH_2-CH_2-OH)-O-$, $-O$ -cyclohexanediyl- $C(CH_3)_2$ -cyclohexanediyl- $O-$, $-O$ -phenylene- $C(CH_3)_2$ -phenylene- $O-$, $-O$ -phenylene- CH_2 -phenylene- $O-$, $-Si(CH_3)_2-$, $-O-Si(CH_3)_2-O-$, $-O-Si(CH_3)(O-CH_3)-O-$, $-Si(CH_3)(R_{17})-O-Si(CH_3)(R_{18})-$, 5-(2-hydroxyethyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl and/or by from one to nine oxygen atoms, or
- R_6 is an n -valent radical of linear or branched $-CO-NH-(C_2-C_9$ alkylene)- $(NH-CO)_{n-1}-$ or linear or branched $-CO-NH-(C_0-C_9$ alkylene)- $(NH-CO)_{n-1}-$ which may be interrupted by one or two phenylene, methylphenylene, phenylene- O -phenylene, cyclohexanediyl, methylcyclohexanediyl, trimethylcyclohexanediyl, norbornanediyl, [1-3]diazetidene-2,4-dione-1,3-diyl, 5-(6-isocyanatohexyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl or 3-(6-isocyanatohexyl)-biuret-1,5-diyl radical(s), or
- R_6 is an n -valent radical of linear or branched $-CO-(C_0-C_{12}$ alkylene)- $(CO)_{n-1}-$ and the alkylene may be interrupted by oxygen, phenylene, cyclohexanediyl or by norbornanediyl;
- R_7 is hydrogen, $-Si(C_1-C_6$ alkyl) $_3$, C_1 - C_{12} alkyl, R_{21} , C_2 - C_{18} acyl, $-CO-NH-C_1-C_{12}$ alkyl, C_2 - C_{20} hydroxyalkyl, C_2 - C_{20} methoxyalkyl, 3-(C_1 - C_{18} alkoxy)-2-hydroxy-propyl, 3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]-propyl, 2,3-dihydroxypropyl or linear or branched C_2 - C_{21} hydroxyalkyl or (C_1 - C_4 alkoxy)- C_2 - C_{21} alkyl the carbon chain of which is interrupted by from one to nine oxygen atoms;
- R_{10} is hydrogen, $-Si(C_1-C_6$ alkyl)(CH_3) $_2$, C_1 - C_8 alkyl, C_3 - C_6 alkenyl or benzyl;
- R_{17} and R_{18} are each independently of the other a monovalent radical methyl, $-O-Si(CH_3)_3$, $-O-Si(CH_3)_2-O-Si(CH_3)_3$, $-O-Si(CH_3)[-(CH_2)_p-OH]-O-Si(CH_3)$ or a bivalent radical $-O-Si(CH_3)_2-$, $-O-Si(CH_3)[-(CH_2)_p-OH]-$, $-O-Si(CH_3)(R_{19})-$, $-O-Si(CH_3)(R_{20})-$ and form chains;
- R_{19} and R_{20} are each independently of the other a monovalent radical methyl, $-O-Si(CH_3)_3$, $-O-Si(CH_3)_2-O-Si(CH_3)_3$, $-O-Si(CH_3)[-(CH_2)_p-OH]-O-Si(CH_3)$ or a bivalent radical $-O-Si(CH_3)_2-$,

~~-O-Si(CH₃)[-(CH₂)_p-OH]-, -O-Si(CH₃)(R₁₉)-, -O-Si(CH₃)(R₂₀)-~~ and extend chains and, when R₁₉ and R₂₀ are linked into a ring, -(R₁₉)-(R₂₀)- is the bridge -O-;

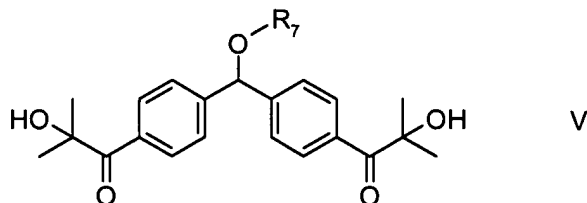
R₂₁ is, independently of formula III, a radical of the formula



; and

p is an integer from 2 to 12, it being possible for the carbon chain of the alkylene to be interrupted by from one to three oxygen atoms.

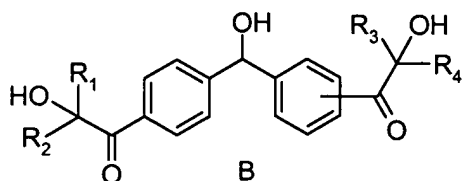
3. (original) A photoinitiator according to claim 1 of formula V



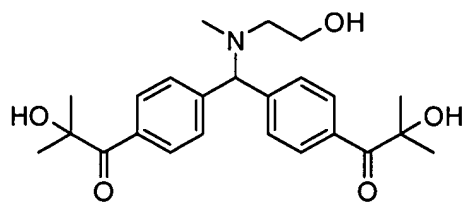
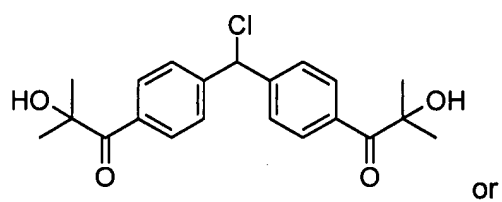
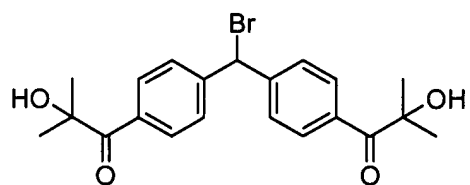
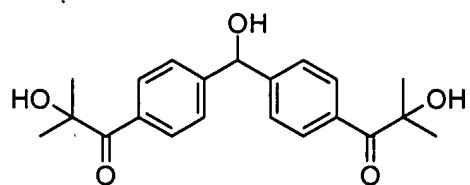
wherein

R₇ is hydrogen, -Si(CH₃)₃, C₁-C₈alkyl, bis[4-(2-hydroxy-2-methyl-propionyl)-phenyl]-methyl, C₂-C₁₈acyl, -CO-NH-C₁-C₈alkyl, C₂-C₂₀hydroxyalkyl, C₂-C₂₀methoxyalkyl or C₂-C₂₀hydroxyalkyl the carbon chain of which is interrupted by from one to nine oxygen atoms.

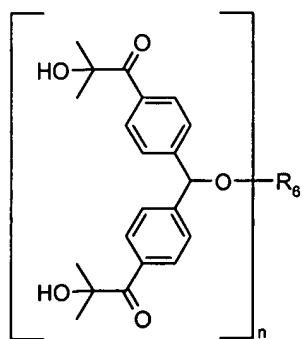
4. (previously presented) A photoinitiator according to claim 1 of the formula B



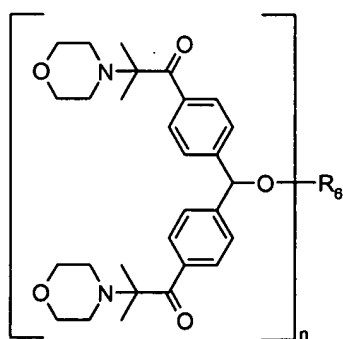
5. (previously presented) A photoinitiator according to claim 1 of formula



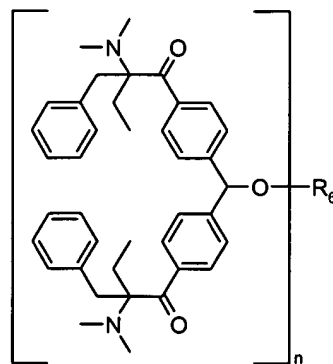
6. (currently amended) A photoinitiator according to claim 1 of formula VI, VII or VIII



VI



VII

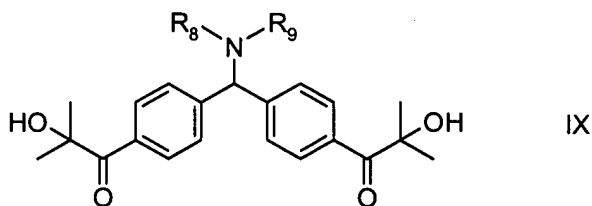


VIII

wherein

- n is an integer from 1 to 4, and
- R₆ is an n-valent radical of linear or branched C₂-C₁₆alkyl the carbon chain of which may be interrupted by cyclohexanediyl, phenylene, -CH(OH)-, -C(CH₂-CH₂-OH)₂-, -C(CH₃)(CH₂-CH₂-OH)-, -C(C₂H₅)(CH₂-CH₂-OH)-, -N(CH₃)-, -N(CH₂-CH₂-OH)-, -CO-O-, -O-CO-, -Si(CH₃)₂-, -Si(CH₃)(R₁₇)-O-Si(CH₃)(R₁₈)-, -O-Si(CH₃)₂-O-, -O-Si(CH₃)(O-CH₃)-O-, 5-(2-hydroxyethyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl and / or by from one to six oxygen atoms, or
- R₆ is an n-valent radical of linear or branched -CO-NH-(C₂-C₁₆alkylene)-(NH-CO)_{n-1}- or linear or branched -CO-NH-(C₀-C₉alkylene)-(NH-CO)_{n-1}- which may be interrupted by one or two phenylene, methylphenylene, phenylene-O-phenylene, cyclohexanediyl, methylcyclohexanediyl, trimethylcyclohexanediyl, norbornanediyl, [1-3]diazetidone-2,4-dione-1,3-diyl, 5-(6-isocyanatohexyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl or 3-(6-isocyanatohexyl)-biuret-1,5-diyl radical(s),
- R₁₇ and R₁₈ are each independently of the other a monovalent radical methyl, -O-Si(CH₃)₃, -O-Si(CH₃)₂-O-Si(CH₃)₃, -O-Si(CH₃)[-(CH₂)_p-OH]-O-Si(CH₃) or a bivalent radical -O-Si(CH₃)₂-, -O-Si(CH₃)[-(CH₂)_p-OH]-, -O-Si(CH₃)(R₁₉)-, -O-Si(CH₃)(R₂₀)- and form chains,
- R₁₉ and R₂₀ are each independently of the other a monovalent radical methyl, -O-Si(CH₃)₃, -O-Si(CH₃)₂-O-Si(CH₃)₃, -O-Si(CH₃)[-(CH₂)_p-OH]-O-Si(CH₃) or a bivalent radical -O-Si(CH₃)₂-, -O-Si(CH₃)[-(CH₂)_p-OH]-, ~~-O-Si(CH₃)(R₁₉)-, -O-Si(CH₃)(R₂₀)-~~ and extend chains and, when R₁₉ and R₂₀ are linked into a ring, -(R₁₉)-(R₂₀)- is the bridge -O-, and
- p is an integer from 2 to 12, it being possible for the carbon chain of the alkylene to be interrupted by from one to three oxygen atoms.

7. (previously presented) A photoinitiator according to claim 1 of formula IX



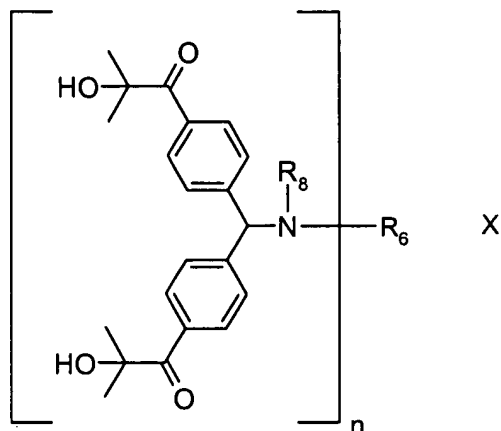
wherein

R₈ and R₉ are each independently of the other hydrogen, C₁-C₁₂alkyl,; C₂-C₄alkyl substituted by one or more of the groups OH, C₁-C₄alkoxy, -CN, -COO(C₁-C₄alkyl); C₃-C₅alkenyl, cyclohexyl or C₇-C₉phenylalkyl, or

when $R_9 = \text{H}$ or methyl, R_8 is also $\text{C}_2\text{-C}_{50}$ alkyl substituted by one or more of the groups methyl, ethyl, OH or NH_2 , and is interrupted by one or more oxygen, $-\text{NH}-$, cyclohexanediyl, norbornanediyl or phenylene, or

R_8 and R_9 together are unbranched or branched $\text{C}_3\text{-C}_9$ alkylene which may be interrupted by $-\text{O}-$ or by $-\text{N}(\text{R}_{15})-$.

8. (previously presented) A photoinitiator according to claim 1 of formula X



wherein

n is an integer from 1 to 4, and

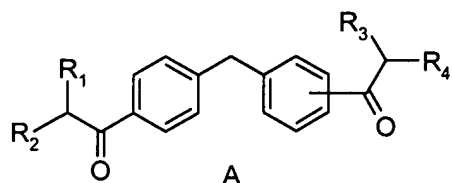
R_6 is an n -valent radical of linear or branched $\text{C}_2\text{-C}_{16}$ alkyl the carbon chain of which may be interrupted by cyclohexanediyl, phenylene, $-\text{CH}(\text{OH})-$, $-\text{C}(\text{CH}_2\text{-CH}_2\text{-OH})_2-$, $-\text{C}(\text{CH}_3)(\text{CH}_2\text{-CH}_2\text{-OH})-$, $-\text{C}(\text{C}_2\text{H}_5)(\text{CH}_2\text{-CH}_2\text{-OH})-$, $-\text{N}(\text{CH}_3)-$, $-\text{N}(\text{CH}_2\text{-CH}_2\text{-OH})-$, $-\text{CO-O}-$, $-\text{O-CO}-$, $-\text{O-CO-NH}$, $\text{NH-CO-O}-$, $-\text{Si}(\text{CH}_3)_2-$, $-\text{Si}(\text{CH}_3)(\text{R}_{17})-\text{O-Si}(\text{CH}_3)(\text{R}_{18})-$, $-\text{O-Si}(\text{CH}_3)_2-\text{O}-$, $-\text{O-Si}(\text{CH}_3)(\text{O-CH}_3)-\text{O}-$, 5-(2-hydroxyethyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl and / or by from one to six oxygen atoms, or

R_6 is an n -valent radical of linear or branched $\text{-C}_2\text{-C}_{50}$ alkylene the carbon chain of which is interrupted by one to 15 oxygen, and may be substituted by OH or NH_2 ; and

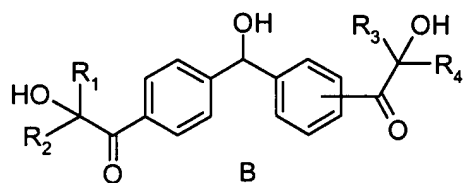
R_8 is hydrogen, $\text{C}_1\text{-C}_4$ alkyl,; $\text{C}_2\text{-C}_4$ alkyl substituted by one or more of the groups OH, $\text{C}_1\text{-C}_4$ alkoxy, $-\text{CN}$, $-\text{COO}(\text{C}_1\text{-C}_4\text{alkyl})$; $\text{C}_3\text{-C}_5$ alkenyl, cyclohexyl or $\text{C}_7\text{-C}_9$ phenylalkyl.

9. (currently amended) A process for the preparation of a compound of formula I or II, comprising the following steps:

- a) reaction of diphenylmethane with an acid halide of formula $R_1R_2CH-COHal$ and, optionally, further reaction with an acid halide of formula $R_3R_4CH-COHal$ in the presence of a Friedel-Crafts catalyst, whereupon an isomeric mixture of formula A is obtained,

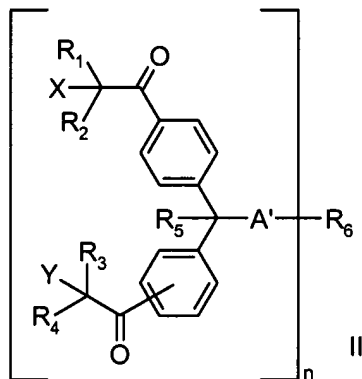
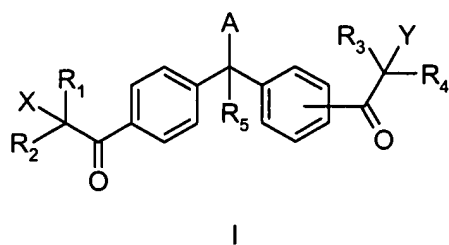


- b) halogenation of the isomeric mixture of formula A, followed by bromination and hydrolysis, whereupon an isomeric mixture of formula B is obtained,



- c) optionally, selective substitution of the benzylic hydroxy group in the resulting isomeric mixture of formula B by reaction
- with an alcohol in the presence of an acid as catalyst for the preparation of an ether,
 - with a carboxylic acid for the preparation of an ester,
 - with an isocyanate for the preparation of a urethane,
 - with a diol, dicarboxylic acid or diisocyanate for the preparation of a bridged compound,
 - with a diisocyanate together with a diol or a diamine or
 - with a siloxane for the preparation of a silicone derivative,
- d) optionally, reaction of the alpha-hydroxy group in the resulting isomeric mixture of formula B and
- e) optionally, separation of the isomers,

where the compounds of formula I and II are



wherein

R_1 , R_2 , R_3 and R_4 are each independently of the others C_1 - C_8 alkyl; C_1 - C_4 alkyl substituted by OH, C_1 - C_4 alkoxy, -CN, -COO(C_1 - C_8 alkyl), (C_1 - C_4 alkyl)-COO-, benzyl, phenyl or by -N(R_{13})(R_{14});

C_3 - C_6 alkenyl, benzyl, -CH₂-C₆H₄-(C_1 - C_4 alkyl) or phenyl; or

R_1 and R_2 together and / or R_3 and R_4 together are unbranched or branched C_2 - C_9 alkylene or C_3 - C_6 -oxa- or -aza-alkylene;

R_5 is hydrogen, C_1 - C_8 alkyl, C_3 - C_6 alkenyl, benzyl, -CH₂-C₆H₄-(C_1 - C_4 alkyl) or phenyl;

A is Cl, Br, -O- R_7 , -NR₈ R_9 or -S- R_{16} ;

A' is -O-, -NH- or -NR₈-;

X and Y are each independently of the other -O- R_{10} or -N(R_{11})(R_{12});

n is an integer from 1 to 10;

R_6 is an n-valent radical of linear or branched C_2 - C_{20} alkyl the carbon chain of which may be interrupted by cyclohexanediyl, phenylene, -CH(OH)-, -C(C₂H₅)(CH₂-CH₂-OH)-,

-C(CH₃)(CH₂-CH₂-OH)-, -C(CH₂-CH₂-OH)₂-, -N(CH₃)-, -N(C₂H₅)-, -N(CH₂-CH₂-OH)-,

-CO-O-, -O-CO-, -O-CO-NH, NH-CO-O-, -P(CH₂-CH₂-OH)-, -P(O)(CH₂-CH₂-OH)-,

-O-P(O-CH₂-CH₂-OH)-O-, -O-P(O)(O-CH₂-CH₂-OH)-O-,

-O-cyclohexanediyl-C(CH₃)₂-cyclohexanediyl-O-,

-O-phenylene-C(CH₃)₂-phenylene-O-, -O-phenylene-CH₂-phenylene-O-,

-Si(CH₃)₂-, -O-Si(CH₃)₂-O-, -O-Si(CH₃)(O-CH₃)-O-, -Si(CH₃)(R_{17})-O-Si(CH₃)(R_{18})-,

5-(2-hydroxyethyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl and/or by from one to nine oxygen atoms, or

R_6 is an n-valent radical of linear or branched -CO-NH-(C_2 - C_{16} alkylene)-(NH-CO)_{n-1}- or linear or branched -CO-NH-(C_0 - C_9 alkylene)-(NH-CO)_{n-1}- which may be interrupted by one or two phenylene, methylphenylene, phenylene-O-phenylene, cyclohexanediyl, methylcyclohexanediyl, trimethylcyclohexanediyl, norbornanediyl, [1-3]diazetidone-2,4-dione-1,3-diyl, 3-(6-

isocyanatohexyl)-biuret-1,5-diyl or 5-(6-isocyanatohexyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl radical(s), or

R₆ is an n-valent radical of linear or branched -CO-(C₀-C₁₂alkylene)-(CO)_{n-1}- and the alkylene may be interrupted by oxygen, phenylene, cyclohexanediyl or by norbornanediyl; , or

R₆ is an n-valent radical of linear or branched -C₂-C₅₀alkylene the carbon chain of which is interrupted by one to 15 oxygen, and may be substituted by OH or NH₂;

R₇ is hydrogen, -Si(C₁-C₆alkyl)₃, C₁-C₁₂alkyl, R₂₁, C₂-C₁₈acyl, -CO-NH-C₁-C₁₂alkyl, C₂-C₂₀hydroxyalkyl, C₂-C₂₀methoxyalkyl, 3-(C₁-C₁₈alkoxy)-2-hydroxy-propyl, 3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]-propyl, 2,3-dihydroxy-propyl or linear or branched C₂-C₂₁hydroxyalkyl or (C₁-C₄alkoxy)-C₂-C₂₁alkyl the carbon chain of which is interrupted by from one to nine oxygen atoms;

R₈ and R₉ are each independently of the other hydrogen, C₁-C₁₂alkyl; C₂-C₄alkyl substituted by one or more of the groups OH, C₁-C₄alkoxy, -CN, -COO(C₁-C₄alkyl); C₃-C₅alkenyl, cyclohexyl or C₇-C₉phenylalkyl, or

when R₉ = H or methyl, R₈ is also C₂-C₅₀alkyl substituted by one or more of the groups methyl, ethyl, OH, NH₂, and is interrupted by one or more oxygen, -NH-, cyclohexanediyl, norbornanediyl or phenylene, or

R₈ and R₉ together are unbranched or branched C₃-C₉alkylene which may be interrupted by -O- or by -N(R₁₅)-;

R₁₀ is hydrogen, -Si(C₁-C₆alkyl)₃, C₁-C₈alkyl, C₃-C₆alkenyl or benzyl,

R₁₁ and R₁₂ are each independently of the other C₁-C₁₂alkyl; C₂-C₄alkyl substituted by one or more of the groups OH, C₁-C₄alkoxy, -CN, -COO(C₁-C₄alkyl); C₃-C₅alkenyl, cyclohexyl or C₇-C₉phenylalkyl, or

R₁₁ and R₁₂ together are unbranched or branched C₃-C₉alkylene which may be interrupted by -O- or by -N(R₁₅)-;

R₁₃ and R₁₄ are each independently of the other hydrogen, C₁-C₁₂alkyl; C₂-C₄alkyl substituted by one or more of the groups OH, C₁-C₄alkoxy, -CN, -COO(C₁-C₄alkyl); C₃-C₅alkenyl, cyclohexyl or C₇-C₉phenylalkyl, or

R₁₃ and R₁₄ together are unbranched or branched C₃-C₉alkylene which may be interrupted by -O- or by -N(R₁₅)-;

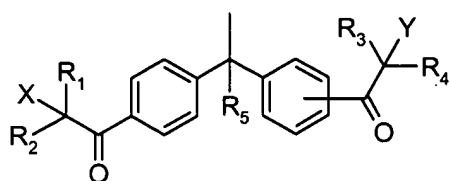
R₁₅ is hydrogen, C₁-C₄alkyl, allyl, benzyl, C₁-C₄hydroxyalkyl, -CH₂CH₂-COO(C₁-C₄alkyl) or -CH₂CH₂CN;

R₁₆ is C₁-C₁₈alkyl, hydroxyethyl, 2,3-dihydroxypropyl, cyclohexyl, benzyl, phenyl, C₁-C₁₂alkylphenyl, -CH₂-COO(C₁-C₁₈alkyl), -CH₂CH₂-COO(C₁-C₁₈alkyl) or -CH(CH₃)-COO(C₁-C₁₈alkyl);

R_{17} and R_{18} are each independently of the other a monovalent radical methyl, $-\text{O}-\text{Si}(\text{CH}_3)_3$, $-\text{O}-\text{Si}(\text{CH}_3)_2-\text{O}-\text{Si}(\text{CH}_3)_3$, $-\text{O}-\text{Si}(\text{CH}_3)[-(\text{CH}_2)_p-\text{OH}]-\text{O}-\text{Si}(\text{CH}_3)$ or a bivalent radical $-\text{O}-\text{Si}(\text{CH}_3)_2-$, $-\text{O}-\text{Si}(\text{CH}_3)[-(\text{CH}_2)_p-\text{OH}]$ -, $-\text{O}-\text{Si}(\text{CH}_3)(R_{19})$ -, $-\text{O}-\text{Si}(\text{CH}_3)(R_{20})$ - and form chains;

R_{19} and R_{20} are each independently of the other a monovalent radical methyl, $-\text{O}-\text{Si}(\text{CH}_3)_3$, $-\text{O}-\text{Si}(\text{CH}_3)_2-\text{O}-\text{Si}(\text{CH}_3)_3$, $-\text{O}-\text{Si}(\text{CH}_3)[-(\text{CH}_2)_p-\text{OH}]-\text{O}-\text{Si}(\text{CH}_3)$ or a bivalent radical $-\text{O}-\text{Si}(\text{CH}_3)_2-$, $-\text{O}-\text{Si}(\text{CH}_3)[-(\text{CH}_2)_p-\text{OH}]$ -, ~~$-\text{O}-\text{Si}(\text{CH}_3)(R_{19})$ -, $-\text{O}-\text{Si}(\text{CH}_3)(R_{20})$ -~~ and extend chains and, when R_{19} and R_{20} are linked into a ring, $-(R_{19})-(R_{20})$ - is the bridge $-\text{O}-$;

R_{21} is, independently of formula I, a radical of the formula

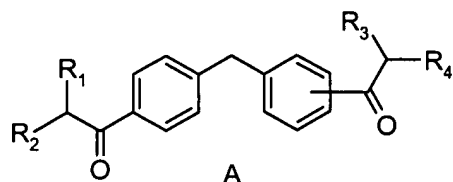


; and

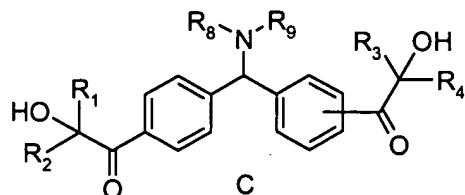
p is an integer from 2 to 12, it being possible for the carbon chain of the alkylene to be interrupted by from one to three oxygen atoms.

10. (currently amended) A process for the preparation of compound I or II, comprising the following steps:

a) reaction of diphenylmethane with an acid halide of formula $R_1R_2\text{CH}-\text{COHal}$ and, optionally, further reaction with an acid halide of formula $R_3R_4\text{CH}-\text{COHal}$ in the presence of a Friedel-Crafts catalyst, whereupon an isomeric mixture of formula A is obtained,

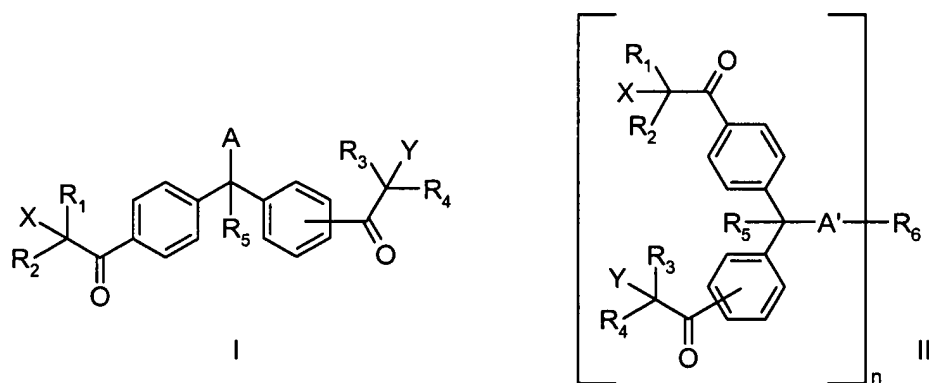


b) halogenation of the isomeric mixture of formula A, followed by bromination, aminolysis of the benzylic bromide, and hydrolysis of the tertiary halides, whereupon an isomeric mixture of formula C is obtained,



- c) optionally, when R_8 or R_9 in the isomeric mixture of formula C possess a primary hydroxy group, selective substitution of the primary hydroxy group by reaction with a carboxylic acid for the preparation of an ester, with an isocyanate for the preparation of a urethane, with a dicarboxylic acid or diisocyanate for the preparation of a bridged compound or with a siloxane for the preparation of a silicone derivative and
- d) optionally, separation of the isomers,

where the compounds of formula I and II are



wherein

R_1 , R_2 , R_3 and R_4 are each independently of the others C_1 - C_8 alkyl; C_1 - C_4 alkyl substituted by OH, C_1 - C_4 alkoxy, -CN, -COO(C_1 - C_8 alkyl), (C_1 - C_4 alkyl)-COO-, benzyl, phenyl or by -N(R_{13})(R_{14});

C_3 - C_6 alkenyl, benzyl, -CH₂-C₆H₄-(C_1 - C_4 alkyl) or phenyl; or

R_1 and R_2 together and / or R_3 and R_4 together are unbranched or branched C_2 - C_9 alkylene or C_3 - C_6 -oxa- or -aza-alkylene;

R_5 is hydrogen, C_1 - C_8 alkyl, C_3 - C_6 alkenyl, benzyl, -CH₂-C₆H₄-(C_1 - C_4 alkyl) or phenyl;

A is Cl, Br, -O- R_7 , -NR₈R₉ or -S- R_{16} ;

A' is -O-, -NH- or -NR₈-;

X and Y are each independently of the other -O- R_{10} or -N(R_{11})(R_{12});

n is an integer from 1 to 10;

R_6 is an n-valent radical of linear or branched C_2 - C_{20} alkyl the carbon chain of which may be interrupted by cyclohexanediyl, phenylene, -CH(OH)-, -C(C₂H₅)(CH₂-CH₂-OH)-, -C(CH₃)(CH₂-CH₂-OH)-, -C(CH₂-CH₂-OH)₂-, -N(CH₃)-, -N(C₂H₅)-, -N(CH₂-CH₂-OH)-, -CO-O-, -O-CO-, -O-CO-NH, NH-CO-O-, -P(CH₂-CH₂-OH)-, -P(O)(CH₂-CH₂-OH)-,

- O-P(O-CH₂-CH₂-OH)-O-, -O-P(O)(O-CH₂-CH₂-OH)-O-,
 -O-cyclohexanediyl-C(CH₃)₂-cyclohexanediyl-O-,
 -O-phenylene-C(CH₃)₂-phenylene-O-, -O-phenylene-CH₂-phenylene-O-,
 -Si(CH₃)₂-, -O-Si(CH₃)₂-O-, -O-Si(CH₃)(O-CH₃)-O-, -Si(CH₃)(R₁₇)-O-Si(CH₃)(R₁₈)-,
 5-(2-hydroxyethyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl and/or by from one to nine oxygen atoms, or
- R₆ is an n-valent radical of linear or branched -CO-NH-(C₂-C₁₆alkylene)-(NH-CO)_{n-1}- or linear or branched -CO-NH-(C₀-C₉alkylene)-(NH-CO)_{n-1}- which may be interrupted by one or two phenylene, methylphenylene, phenylene-O-phenylene, cyclohexanediyl, methylcyclohexanediyl, trimethylcyclohexanediyl, norbornanediyl, [1-3]diazetidene-2,4-dione-1,3-diyl, 3-(6-isocyanatohexyl)-biuret-1,5-diyl or 5-(6-isocyanatohexyl)-[1,3,5]triazinane-2,4,6-trione-1,3-diyl radical(s), or
- R₆ is an n-valent radical of linear or branched -CO-(C₀-C₁₂alkylene)-(CO)_{n-1}- and the alkylene may be interrupted by oxygen, phenylene, cyclohexanediyl or by norbornanediyl; , or
- R₆ is an n-valent radical of linear or branched -C₂-C₅₀alkylene the carbon chain of which is interrupted by one to 15 oxygen, and may be substituted by OH or NH₂;
- R₇ is hydrogen, -Si(C₁-C₆alkyl)₃, C₁-C₁₂alkyl, R₂₁, C₂-C₁₈acyl, -CO-NH-C₁-C₁₂alkyl, C₂-C₂₀hydroxyalkyl, C₂-C₂₀methoxyalkyl, 3-(C₁-C₁₈alkoxy)-2-hydroxy-propyl, 3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]-propyl, 2,3-dihydroxy-propyl or linear or branched C₂-C₂₁hydroxyalkyl or (C₁-C₄alkoxy)-C₂-C₂₁alkyl the carbon chain of which is interrupted by from one to nine oxygen atoms;
- R₈ and R₉ are each independently of the other hydrogen, C₁-C₁₂alkyl; C₂-C₄alkyl substituted by one or more of the groups OH, C₁-C₄alkoxy, -CN, -COO(C₁-C₄alkyl); C₃-C₅alkenyl, cyclohexyl or C₇-C₉phenylalkyl, or
- when R₉ = H or methyl, R₈ is also C₂-C₅₀alkyl substituted by one or more of the groups methyl, ethyl, OH, NH₂, and is interrupted by one or more oxygen, -NH-, cyclohexanediyl, norbornanediyl or phenylene, or
- R₈ and R₉ together are unbranched or branched C₃-C₉alkylene which may be interrupted by -O- or by -N(R₁₅)-;
- R₁₀ is hydrogen, -Si(C₁-C₆alkyl)₃, C₁-C₈alkyl, C₃-C₈alkenyl or benzyl,
- R₁₁ and R₁₂ are each independently of the other C₁-C₁₂alkyl; C₂-C₄alkyl substituted by one or more of the groups OH, C₁-C₄alkoxy, -CN, -COO(C₁-C₄alkyl); C₃-C₅alkenyl, cyclohexyl or C₇-C₉phenylalkyl, or

R_{11} and R_{12} together are unbranched or branched C_3 - C_9 alkylene which may be interrupted by -O- or by -N(R_{15})-;

R_{13} and R_{14} are each independently of the other hydrogen, C_1 - C_{12} alkyl; C_2 - C_4 alkyl substituted by one or more of the groups OH, C_1 - C_4 alkoxy, -CN, -COO(C_1 - C_4 alkyl); C_3 - C_5 alkenyl, cyclohexyl or C_7 - C_9 phenylalkyl, or

R_{13} and R_{14} together are unbranched or branched C_3 - C_9 alkylene which may be interrupted by -O- or by -N(R_{15})-;

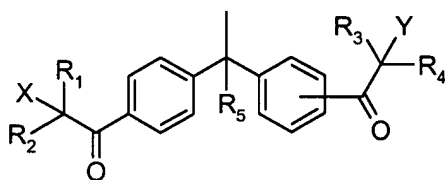
R_{15} is hydrogen, C_1 - C_4 alkyl, allyl, benzyl, C_1 - C_4 hydroxyalkyl, -CH₂CH₂-COO(C_1 - C_4 alkyl) or -CH₂CH₂CN;

R_{16} is C_1 - C_{18} alkyl, hydroxyethyl, 2,3-dihydroxypropyl, cyclohexyl, benzyl, phenyl, C_1 - C_{12} alkylphenyl, -CH₂-COO(C_1 - C_{18} alkyl), -CH₂CH₂-COO(C_1 - C_{18} alkyl) or -CH(CH₃)-COO(C_1 - C_{18} alkyl);

R_{17} and R_{18} are each independently of the other a monovalent radical methyl, -O-Si(CH₃)₃, -O-Si(CH₃)₂-O-Si(CH₃)₃, -O-Si(CH₃)[-(CH₂)_p-OH]-O-Si(CH₃) or a bivalent radical -O-Si(CH₃)₂-, -O-Si(CH₃)[-(CH₂)_p-OH]-, -O-Si(CH₃)(R_{19})-, -O-Si(CH₃)(R_{20})- and form chains;

R_{19} and R_{20} are each independently of the other a monovalent radical methyl, -O-Si(CH₃)₃, -O-Si(CH₃)₂-O-Si(CH₃)₃, -O-Si(CH₃)[-(CH₂)_p-OH]-O-Si(CH₃) or a bivalent radical -O-Si(CH₃)₂-, -O-Si(CH₃)[-(CH₂)_p-OH]-, ~~-O-Si(CH₃)(R_{19})-, -O-Si(CH₃)(R_{20})-~~ and extend chains and, when R_{19} and R_{20} are linked into a ring, -(R_{19})-(R_{20})- is the bridge -O- ;

R_{21} is, independently of formula I, a radical of the formula



; and

p is an integer from 2 to 12, it being possible for the carbon chain of the alkylene to be interrupted by from one to three oxygen atoms.

11. (previously presented) A composition consisting of

- (A) at least one ethylenically unsaturated compound,
- (B) a photoinitiator of formula I or II according to claim 1,
- (C) optionally, further additives and
- (D) optionally, further photoinitiators and coinitiators.

12. (original) A composition according to claim 11, wherein the compound (A) is a resin containing free OH groups, free isocyanate groups or free carboxy groups and the photoinitiator (B) is bonded to the resin.

13. (previously presented) A process for the production of a scratch-resistant durable surface, wherein a composition according to claim 11 is applied to a support; and curing is carried out either solely by means of irradiation with electromagnetic radiation having a wavelength of from 200 nm into the IR range, or by irradiation with electromagnetic radiation and prior, simultaneous and/or subsequent application of heat.

14. (previously presented) A composition according to claim 11 which is a pigmented or non-pigmented surface coating, overprint coating, powder coating, printing ink, inkjet ink, gel coat, composite material or a glass fibre coating.

15. (previously presented) A composition according to claim 12 which is a surface coating for food packaging materials.